

AMSAT News Service Weekly Bulletins

Issue: ANS-183

Date: 2023-07-02

Sources: amsat-ans-2023-ans-183-weekly-hyperkitty-cf9e98f959.txt

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AMSAT NEWS SERVICE

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The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, the Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on <http://www.amsat.org> publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: [ans-editor \[at\] amsat.org](mailto:ans-editor@amsat.org)

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see:  
<https://mailman.amsat.org/postorius/lists/ans.amsat.org/>

ANS-183 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS  
From: Radio Amateur Satellite Corporation  
712 H Street NE, Suite 1653  
Washington, DC 20002

DATE 2023 July 2

AMSAT Announces Candidates for 2023 Board of Directors Election

The nomination period for the 2023 AMSAT Board of Directors Election ended on June 15th. The following candidates have been duly nominated:

Zach Metzinger, N0ZG0  
Jerry Buxton, N0JY  
Drew Glasbrenner, K04MA  
Barry Baines, WD4ASW  
Frank Karnauskas, N1UW

As four seats on the Board of Directors are up for election this year, four of these candidates will be seated on the Board, along with one alternate when the voting period concludes on September 15th. The election will be

held via AMSAT's Wild Apricot membership system. Instructions for voting will be emailed to all members in good standing as of July 1st by July 15th. Biographies of the candidates will be available for review online and published in the next issue of The AMSAT Journal.

[ANS thanks Jeff Davis, KE9V, AMSAT Secretary, for the above information]

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The 2023 AMSAT President's Club coins are here now!

To commemorate the 40th anniversary of its launch on June 16, 1983, this year's coin features an image of AMSAT-OSCAR 10.

Join the AMSAT President's Club today and help Keep Amateur Radio in Space!

<https://www.amsat.org/join-the-amsat-presidents-club/>

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Updated "For Beginners" Compilation Now Available on the AMSAT Website

An updated freely downloadable compilation of "getting started" articles written by Keith Baker, KB1SF/VA3KSF, is now available on the AMSAT website. These articles originally appeared in The AMSAT Journal from 2019 to 2021.

Check out the compilation at <https://www.amsat.org/introduction-to-working-amateur-satellites/>

Unfortunately, because both satellites and URLs change over time, the currentness of information such as this can quickly be overcome by events. However, the tools and techniques outlined in Keith's beginner series are still very much applicable to operating on current and future AMSAT satellites. For the latest information about satellites currently in orbit, please consult the AMSAT Communications Satellites page.

More detailed information can be found in AMSAT's Getting Started with Amateur Satellites book which can be purchased on the AMSAT store.

[ANS thanks Keith Baker, KB1SF/VA3KSF, Past AMSAT President, and Joe Kornowski, KB6IGK, AMSAT Journal Editor-In-Chief, for the above information]

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TX5S DXpedition to Clipperton Island to Include Satellite Operations

The TX5S DXpedition to Clipperton Island, scheduled for January 2024, has announced that it will include satellite operations. The satellite station manager, Andreas, N6NU, reports the following preparation activities for the TX5S DXpedition to Clipperton Island:

Andreas has made his first QSO's made on the I0-117 (GreenCube) Satellite. This satellite has passes that last over an hour and has a huge footprint since it is in an almost 6,000 KM orbit. He has an 11 Element 70CM antenna, RAS Mini AZ/EL rotator with Green Heron Controller, Icom IC-9100H, Rigblaster TI-5000 and Icom AG-35 mast mounted pre-amp. The 6ft mast uses a home brew base. The next step is to configure an Icom IC-9700 as backup. Then on to RS-44 and 6m and 23 cm EME. He appreciates the help and advice offered by several AMSAT members.

For more information on the TX5S DXpedition, visit <https://clip.pdxg.net/>

[ANS thanks the Perseverance DX Group for the above information]

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Need new satellite antennas? Purchase Arrows, Alaskan Arrows, and M2 LEO-Packs from the AMSAT Store. When you purchase through AMSAT, a portion of the proceeds goes towards Keeping Amateur Radio in Space.  
<https://amsat.org/product-category/hardware/>

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## 2023 AMSAT Field Day Preliminary Report

The 2023 AMSAT Field Day is over, and early data shows how the satellites were utilized.

It has been many years since there were more than one or two AMSAT Field Day submissions from outside North America. This year, immediately after of Field Day ended, there were two submissions from Japan.

The satellites worked well. The FM Tevel family of satellites and GreenCube seemed to be popular. SO-50, AO-91, and the International Space Station were also busy with their FM single channels. RS-44 was quite tame, with plenty of bandwidth for many to make contacts, whether they were sitting on a frequency and calling CQ or using the hunt-and-pounce method.

More data is on the way. For updates, visit the AMSAT website.

[ANS thanks Bruce Paige, KK5D0, AMSAT Awards Manager, for the above information]

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## Communication Problems on the Moon

The chilly relationship between the U.S. and China on Earth could raise safety risks in space and the specter of competition on the Moon as both nations aim to send people to the lunar surface in the coming years.

China and the U.S. – the two most dominant players in space today – do not generally collaborate on space research and exploration, and they have limited communication in orbit and beyond. But both nations are separately sending missions to the Moon. NASA expects its astronauts will be back on the surface of the Moon as early as 2025, and China has plans for its taikonauts to land on the lunar surface by around 2030.

The Chinese military is refusing to use established communications channels that could help to prevent an unintended crisis on Earth. Recent close calls between U.S. and Chinese crafts at sea and in the air underscore the risk.

Lack of transparency into activities has framed the U.S-China relationship in space for decades, with some key exceptions, including coordinating orbiters at Mars and NASA collaborating with China during one of the nation's robotic Moon missions.

The Chinese government has a fundamentally different way of engaging in the world that makes open communication difficult, Dean Cheng, a China analyst, tells Axios. The government is "not accustomed to thinking of alliance structures and cooperation," he added.

NASA will likely miss its 2025 Artemis landing date, with technical and budgetary delays pushing the first crewed landing to later in the decade. China, however, "will put a human crew on the Moon by 2030," Cheng said. "If that is their intent, then it will happen."

Communication could be particularly important on the lunar surface because

China and the U.S. are both planning to land missions in the same part of the Moon, at the lunar south pole. While those initial landing zones will likely be widely separated, future missions could lead to new questions about space traffic management, communications satellites and even the primary language used in those activities at the Moon.

[ANS thanks Axios Space for the above information]

#### The Big Bang Theory Antenna Lives On

An antenna that holds an important place in scientific history sits on a small parcel of land on Crawford Hill in Holmdel Township, New Jersey.

The antenna is known as the Holmdel Horn Antenna, and it was built in 1959 by Bell Labs (now Nokia Bell Labs) researchers. It was originally designed to bounce radio signals off of reflective satellite balloons for long-distance communication. It worked, and the Holmdel Horn Antenna was no longer needed.

Two Bell Labs astronomer employees, Arno A. Penzias and Robert W. Wilson, received permission in 1965 to use the antenna to search for radio transmissions in outer space. They pointed the antenna toward what was considered a quiet area, but what they discovered was anything but quiet. They discovered Cosmic Microwave Background radiation, which provided evidence for the Big Bang Theory.

Now, there is a historical marker at the site, but there has been some dispute as to who owns the antenna and surrounding land. In mid-June 2023, the Holmdel Township Committee voted unanimously to approve resolutions that will begin the process of acquiring two of the three parcels that make up the Crawford Hill property. The township committee is leaving the third parcel to be part of the redevelopment toward preserving Crawford Hill as a public park to celebrate the horn antenna's place in scientific history.

Visit the <https://bit.ly/3rbnKaR> to learn more.

[ANS thanks The ARRL Letter for the above information]

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Want to fly the colors on your own grid expedition?  
Get your AMSAT car flag and other neat stuff  
from our Zazzle store!  
25% of the purchase price of each product goes  
towards Keeping Amateur Radio in Space  
[https://www.zazzle.com/amsat\\_gear](https://www.zazzle.com/amsat_gear)

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#### Changes to AMSAT-NA TLE Distribution for 2023 30 June

Two Line Elements or TLEs, often referred to as Keplerian elements or keps in the amateur community, are the inputs to the SGP4 standard mathematical model of spacecraft orbits used by most amateur tracking programs. Weekly updates are completely adequate for most amateur satellites. Elements in the TLE bulletin files are updated daily. TLE bulletin files are updated to add or remove satellites as necessary Thursday evenings around 2300 UTC, or more frequently if new high interest satellites are launched. More information may be found at <https://www.amsat.org/keplerian-elements-resources/>

This week there are no additions or deletions to the weekly AMSAT-NA TLE

distribution.

[ANS thanks AMSAT Orbital Elements page for the above information]

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## ARISS NEWS

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.

### COMPLETED:

Mohammad Bin Rashid Space Centre, Dubai, UAE, direct via A68MBR. The ISS callsign was OR4ISS, and the crewmember was Sultan Al Neyadi, KI5VTV. The ARISS mentor was ON6TI. Contact was successful: Thursday, 2023-06-22 08:38:52 UTC with 51 degrees maximum elevation. Congratulations to the Mohammad Bin Rashid Space Centre students, Sultan Al Neyadi KI5VTV, and mentor ON6TI!

### UPCOMING:

Due to summer school holidays, no contacts currently scheduled.

The crossband repeater continues to be active (145.990 MHz up {PL 67} & 437.800 MHz down). If any crewmember is so inclined, all they have to do is pick up the microphone, raise the volume up, and talk on the crossband repeater. So give a listen, you just never know.

The packet system is also active (145.825 MHz up & down).

As always, if there is an EVA, a docking, or an undocking; the ARISS radios are turned off as part of the safety protocol.

Note, all times are approximate. It is recommended that you do your own orbital prediction or start listening about 10 minutes before the listed time.

The latest information on the operation mode can be found at <https://www.ariss.org/current-status-of-iss-stations.html>

The latest list of frequencies in use can be found at <https://www.ariss.org/contact-the-iss.html>

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

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## Upcoming Satellite Operations

To include your satellite roving plans in the AMSAT News Service Weekly bulletins, send them to Ian, K5ZM at [k5zm \(at\) comcast \(dot\) net](mailto:k5zm@comcast.net) at least a couple of weeks in advance. Upcoming satellite operations are updated weekly on the AMSAT Upcoming Satellite Operations page but may expire before the next AMSAT News Service bulletin is released. You can watch for the latest roving information to become available at <https://www.amsat.org/satellite-info/upcoming-satellite-operations/>

Mitch Ahrenstorff, AD0HJ, has a satellite rove planned over the July 4th weekend in the hopes of joining the exclusive Western Roving Coalition. Look for him to activate Montana grid squares DN57, DN67, DN77, DN87, DN97, DN56, DN66, DN76, DN86, DN96, DN55, DN65, AND DN64 between June 30th and July 3rd. Planned passes are available at <http://hams.at> OR on Twitter

@GridMasterHeat

Jim DeLoach, WU0I, with XYL, KK6DZS, just started a 6-week road trip. Along the way, they hope to activate a number of rarer grid squares on the FM birds on the way to the Four-Corners area of the Southwest from the Michigan UP, through Western Ontario, Manitoba, Saskatchewan, Alberta, and Idaho.

A growing number of satellite rovers are currently engaged in sharing their grid square activations on <https://hams.at>. By visiting the website, you gain easy access to comprehensive information about the operators responsible for activating specific grid squares. Additionally, you have the ability to assess the match score between yourself and a particular rover for a given pass, while also being able to identify the upcoming satellite passes that are accessible from your location.

[ANS thanks Ian Parsons, K5ZM, AMSAT rover page manager, for the above information]

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#### Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

##### + Small Satellite Conference

August 5-10, 2023

Utah State University, Logan, UT

More information at: <https://smallsat.org/>

##### + AMSAT Space Symposium and Annual General Meeting

October 20-21, 2013

Dallas, Texas

AMSAT Ambassador Clint Bradford, K6LCS, says,

"Think a 75-minute presentation on "working the easy satellites" would be appropriate for your club or event? Let me know by emailing me at [k6lcsclint \(at\) gmail \(dot\) com](mailto:k6lcsclint@gmail.com) or calling me at 909-999-SATS (7287)!"

[ANS thanks the AMSAT Events page for the above information]

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#### Satellite Shorts From All Over

+The 15th annual 13 Colonies Special Event will take place July 1 - July 7, 2023, and will include satellite operations, primarily on the linear transponder satellites. All 13 colonies are covered by satops this year making a clean sweep possible. See <http://www.13colonies.us/> for more details. (ANS thanks Ant Lefebvre, NU1U, for the above information)

+ In a highly anticipated and globally coordinated announcement on Wednesday, June 28, teams of scientists worldwide reported the discovery of the "low pitch hum" of cosmic waves flowing through the Milky Way. While astronomers don't definitively know what's causing the hum, the detected signal is "compelling evidence" and consistent with theoretical expectations of gravitational waves emerging from pairs of "the most massive black holes in the entire universe" weighing as much as billions of suns. (ANS thanks Space.com for the above information)

+ ESA announced the Zero Debris Charter at the Paris Air Show, by which they mean that they will figure out their plans for generating zero space

debris (hopefully) by the end of the year, to be implemented by 2030. (ANS thanks The Orbital Index for the above information)

+ Gamma Ray Burst 221009A, a supernova with its energetic jet pointed directly at Earth, was first observed last October. While it was 2.4 billion light-years away, it still managed to disturb Earth's ionosphere, produced 18 tera-electron-volt photons, and saturated spacecraft X-ray and gamma-ray sensors. This explosion is now referred to as the BOAT (Brightest of All Time) and is thought to be a once-in-a-10,000-year occurrence. It also illuminated dust clouds in our galaxy, allowing their distances and properties to be measured with unprecedented accuracy. (ANS thanks The Orbital Index for the above information)

+ Richard Branson's Virgin Galactic launched its first commercial space flight Thursday, June 29, sending three Italian researchers, two company pilots and an astronaut trainer on a high-speed thrill ride to the edge of space aboard a winged rocketplane. (ANS thanks SpaceflightNow for the above information)

+ A SpaceX Dragon cargo spacecraft left the International Space Station on Thursday, June 29, to return to Earth. The spacecraft is carrying more than 3,600 pounds of equipment, supplies and scientific experiments, some of which have been on the space station for nearly six years and which had their final in-orbit tests completed earlier this year. (ANS thanks Space Daily for the above information)

+ The European Space Agency's Euclid spacecraft launched on July 1 from Cape Canaveral Space Force Station. Euclid features a telescope 1.2 meters across equipped with a camera operating at visible wavelengths and a near-infrared spectrometer and photometer. The two-ton spacecraft will operate at the Earth-sun L-2 point also used by the James Webb Space Telescope 1.5 million kilometers from Earth, generating the largest and most accurate 3-D map of the universe to date. Astronomers hope that Euclid's observations will shed light on two of the biggest mysteries in cosmology: the nature of both dark energy and dark matter that, combined, comprise 95% of the universe. (ANS thanks SpaceNews for the above information)

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Join AMSAT today at <https://launch.amsat.org/>

In addition to regular membership, AMSAT offers membership to:

- \* Societies (a recognized group, clubs or organization).
- \* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
- \* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
- \* Memberships are available for annual and lifetime terms.

Contact info [at] [amsat.org](https://amsat.org) for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Mark Johns, KØJM  
k0jm [at] [amsat.org](https://amsat.org)